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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/882,213	06/14/2001	David R. Oran	2705-169	8455
20575	7590	09/01/2005	EXAMINER	
MARGER JOHNSON & MCCOLLOM, P.C. 210 SW MORRISON STREET, SUITE 400 PORTLAND, OR 97204			PHAN, TRI H	
			ART UNIT	PAPER NUMBER
			2661	

DATE MAILED: 09/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/882,213

Applicant(s)

ORAN, DAVID R.

Examiner

Tri H. Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 3 and 31 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-5, 7-16, 18-21, 23-24, 26-30, 32-33, 35-39, 41-42, 44-45, 48, and 50-53 is/are rejected.
- 7) ☐ Claim(s) 6, 17, 22, 25, 34, 40, 43, 46-47, 49, and 54 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment/Arguments

1. This Office Action is in response to the Response/Amendment filed on June 3rd, 2005.

New claims 51-54 are added. Claims 1-54 are now pending in the application.

Drawings

2. This application has been filed with informal drawings, which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Claim Objections

3. Claims 6, 10 and 20-22 are objected to because of the following informalities:

In claim 6, line 1, the word “the” in front of the term “gratuitous” should be corrected to - a -- for clarity.

In claim 10, line 5, the end period “.” after the term “multiple ports” is a typographical error; it should be corrected to -- ; -- for clarity.

In claim 20, line 2, the comma “,” in front of the word “comprising” should be placed after the word “network”. Same problem exists in claim 22, line 3, the comma “,” in front of the word “comprising” should be placed after the word “network”.

In claim 21, line 2, the word “the” in front of the phrase “network processing” should be corrected to -- a -- for clarity.

Appropriate corrections are required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

5. Claims 1-2, 9-12, 15, 18-21, 28-30, 37-39, 42, 45, 48, and 51-53 are rejected under 35 U.S.C. 102(e) as being anticipated by **Haggerty et al.** (U.S.6,331,983; hereinafter refer as ‘**Haggerty**’).

Regarding claims 1, 20, and 29, Haggerty discloses *the method* (claim 1), *the computer program* (claim 20, Haggerty, col. 14, lines 55-65), *and the system* (claim 29) *for identifying failures in the network, which comprise means for detecting the port failure in the switch* (col. 30, lines 58-60); *means for identifying one or more MAC addresses associated with the port failure* (col. 30, lines 60-62); *and means for send failure notifications to other ports on the switch that identify the MAC addresses associated with the port failure* (col. 30, line 65 through col. 31, line 3) *wherein the failure notifications include the MAC addresses associated with the port failure* (wherein, through the use of “unmap down” or “unmap up” message, the link or port failure notification is sent to any node, which has connection effected by the link or port failure or node “associated with the port failure”, to

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unmap or delete the connections or ports from the connection table as disclosed in col. 30, line 58 through col. 31, line 34. It is inherent that the notification message sent out to the 'effected nodes' has to have the node address, i.e. "MAC address" as disclosed in col. 15, lines 49-60; col. 16, lines 56-64, in order the effected nodes to receive the notification message).

Regarding claims 2, 21, and 30, in addition to features in base claims 1, 20 and 29, (see rationales pertaining the rejection of base claims 1, 20 and 29 discussed above), Haggerty further discloses the method of claim 1, the computer program of claim 20, and the system of claim 29. Haggerty further discloses, *means for identifying when multiple ports connected to the network processing device have failed* (col. 30, lines 58-60 where the system detects port failure on all of the ports, not just one); *and means for sending separate failure notifications to the other ports in the switch identifying each one of the multiple ports connected to the network processing device that have failed* (col. 30, lines 60-col. 31, lines 1-3).

Regarding claims 9, 28, and 37, in addition to features in base claims 1, 20 and 29, (see rationales pertaining the rejection of base claims 1, 20 and 29 discussed above), Haggerty further discloses the method of claim 1, the computer program of claim 21, and the system of claim 29. Haggerty further discloses, *means for configuring the switch to send the failure notification only to the other ports in the switch coupled to routers or other switches* (col. 30, lines 58-col. 31, lines 1-3).

Regarding claim 10, Haggerty discloses about the switch, that comprises *multiple ports that monitor for the communication failure with connected network processing devices* (col. 30, lines 58-62); *and the processor that sends a failure notification out through the multiple ports when the communication failure is detected on one of the multiple ports* (col. 30, lines 60-col. 31, lines 1-3); *wherein the failure notifications include a plurality of MAC addresses associated with the communication failure* (wherein, through the use of “unmap down” or “unmap up” message, the link or port failure notification is sent to any node or group nodes as disclosed in col. 24, lines 11-25, which has connections effected by the link or port failure or node “*associated with the port failure*”, to unmap or delete the connections or ports from the connection table as disclosed in col. 30, line 58 through col. 31, line 34. It is inherent that the notification message sent out to the ‘effected nodes’ has to have the node address, i.e. “*MAC address*” as disclosed in col. 15, lines 49-60; col. 16, lines 56-64, in order the effected nodes to receive the notification message).

Regarding claim 11, in addition to features in base claim 10, (see rationales pertaining the rejection of base claim 10 discussed above), Haggerty further discloses, the switch according to claim 10 including *the table that includes MAC addresses associated with the multiple ports, the processor including in the failure notification the MAC address in the table associated with the port detecting the communication failure* (figure 6, element 34 as described in col. 16, lines 49-64).

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Regarding claim 12, in addition to features in base claim 10, (see rationales pertaining the rejection of base claim 10 discussed above), Haggerty further discloses, the switch according to claim 10 including *the port configuration table that identifies which ports the processor sends the failure notification* (figure 6, element 34 as described in col. 16, lines 49-64).

Regarding claim 15, in addition to features in base claim 10, (see rationales pertaining the rejection of base claim 10 discussed above), Haggerty further discloses, the switch according to claim 10 including *additional multiple ports on the switch connected to the first network processing device, the processor sending the separate failure notification for each one of the additional multiple ports connected to the first network processing device detecting the failure* (col. 30, line 60 through col. 31, line 3).

Regarding claim 18, Haggerty further discloses, the switch according to claim 10 *wherein the switch is an Ethernet switch for coupling to multiple routers* (col. 23, lines 4-6)."

Regarding claim 19, Haggerty further discloses, the switch according to claim 18 including *additional ports on the switch for coupling to personal computers over a VLAN connection* (col. 25, lines 49-61).

Regarding claims 38, 42, 45, and 48, Haggerty discloses about *the device* (claim 38), *the method* (claim 42), *the computer program* (claim 45, Haggerty, col. 14, lines 55-65), and *the system* (claim 48), *which comprise one or more ports for communicating and receiving failure*

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notifications from the switch, the failure notifications including the MAC address associated with the port on the switch that has failed (col. 30, lines 58-62); and the processor that reroutes around the adjacent network processing device on the switch associated with the MAC address in the failure notification (col. 30, line 65 through col. 31, line 3).

Regarding claim 39, in addition to features in base claim 38 (see rationales pertaining the rejection of base claim 38 discussed above), Haggerty further discloses *about the network processing device according to claim 38 including the adjacency table that identifies MAC addresses for adjacent network processing devices connected to the switch, the processor routing around any MAC address in the adjacency table matching the MAC address in the failure notification (figure 6, element 34 as described in col. 16, lines 49-64).*

Regarding claim 51-52, Haggerty discloses *about the method, which receives failure notifications and compares the MAC address in the failure notifications with MAC adjacencies (col. 24, lines 3-7); and routes around the adjacency when the MAC address in one of the failure notifications matches the adjacency and there are no other MAC addresses associated with the adjacency (col. 24, lines 7-25).*

Regarding claim 53, in addition to features in base claim 52, (see rationales pertaining the rejection of base claim 52 discussed above), Haggerty further discloses *about routing around the adjacency when multiple MAC addresses in the failure notifications identify all MAC addresses associated with the adjacency (col. 24, lines 11-25).*

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 5, 8, 13-14, 24, 27, 33, 36, 40, 43, 46, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Haggerty et al.** (U.S.6,331,983; hereinafter refer as '**Haggerty**') in view of **Hirst et al.** (U.S.6,581,166; hereinafter refer as '**Hirst**').

Regarding claims 5, 24, and 33, Haggerty discloses the method of claim 1, the computer program of claim 21, and the system of claim 29. However, Haggerty lacks what Hirst discloses, *means for sending the failure notifications using the Address Resolution Protocol 'ARP' reply* (col. 8, lines 23-38; where the ARP reply identifies a failure in that it contains the identity of a "unexpected" address, thus indicating a failure; and wherein the NGP is sent back in response to the ARP request, instead of ARP response, e.g. "*wherein the sending the ARP reply is not in response to the ARP request*" as disclosed in col. 8, lines 50-58). It would have been obvious to one of ordinary skill in the art at the time of invention to include the ARP reply for the purpose of establishing a communication path. The motivation for establishing a communication path is so that in the presence of a fault, communication can still be maintained across newly formed paths thus obviating the failed port.

Regarding claims 8, 27, and 36, Haggerty discloses the method of claim 1, the computer program of claim 21, and the system of claim 29. However, Haggerty lacks what Hirst discloses, *means for using the heartbeat signal to identify a port failure* (col. 10, lines 7-12). It would have been obvious to one of ordinary skill in the art at the time of invention to include the heartbeat signal for the purpose of monitoring a communication system for faults (Hirst, col. 9, lines 58-65). The motivation for monitoring a system for faults would be to take appropriate corrective action once a fault is detected so that communication is minimally impacted.

Regarding claim 13, Haggerty discloses the switch of claim 10. However, Haggerty lacks what Hirst discloses, *wherein the multiple ports use a layer 1 network protocol to detect the communication failure* (col. 10, lines 7-12 where the heartbeat signal is detected on the physical layer 'layer 1'). It would have been obvious to one of ordinary skill in the art at the time of invention to include the heartbeat signal for the purpose of monitoring a communication system for faults (Hirst, col. 9, lines 58-65). The motivation for monitoring a system for faults would be to take appropriate corrective action once a fault is detected so that communication is minimally impacted.

Regarding claim 14, Haggerty discloses the switch of claim 13. However, Haggerty lacks what Hirst further discloses, *wherein the layer 1 network protocol uses a heartbeat signal or a loss-of-light detector to detect the communication failure* (col. 10, lines 7-12). It would have

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been obvious to one of ordinary skill in the art at the time of invention to include the heartbeat signal for the same reasons and motivation as in claim 13.

8. Claims 4, 23, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Haggerty et al.** (U.S.6,331,983) in view of **Chin et al.** (U.S.5,959,968; hereinafter refer as '**Chin**').

Regarding claims 4, 23, and 32, Haggerty discloses the method of claim 1, the computer program of claim 21, and the system of claim 29. However, Haggerty lacks what Chin discloses, means for sending the failure notifications using a Cisco Discovery Protocol (col. 10, lines 6-15 whereby the physical link-layer protocol is not only used to establish a connection but to administer transmission over that connection, which includes failure notification messages). It would have been obvious to one with ordinary skill in the art at the time of invention to use a Cisco Discovery Protocol for the purpose of establishing and maintaining a link-layer connection. The motivation for establishing and maintaining a link-layer connection is that the link-layer is the physical means by which nodes are connected in a network, therefore, it is necessary for these link-layer connections to exist (and thus a way of controlling them) in order for communication to exist.

9. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Haggerty et al.** (U.S.6,331,983) in view of **Irish, Wesley R.** (U.S.6,757,281; hereinafter refer as '**Irish**').

Regarding claim 16, Haggerty discloses the switch of claim 10. Haggerty further discloses, *the network processing devices operate at layer 3 of the OSI model* (col. 12, lines 66-col. 13, lines 1-9). However, Haggerty lacks what Irish discloses, *wherein the switch operates at layer 2 of an OSI model* (col. 1, lines 39-48). It would have been obvious to one of ordinary skill in the art to have the switch operate at layer 2 for the purpose of, for example, switching an Ethernet packet in an Ethernet network. That is to say, the switching must be done at layer 2 in an Ethernet network because of the address scheme used in Ethernet. The motivation for switching is to forward data from its source to its destination.

10. Claims 41, 44, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Haggerty et al.** (U.S.6,331,983) in view of **Lee et al.** (U.S.6,601,101; hereinafter refer as 'Lee').

Regarding claims 41, 44, and 50, Haggerty discloses the device of claim 38, the method of claim 42, and the system of claim 48. However, Haggerty lacks what Lee discloses, *wherein an adjacent network processing device has multiple ports coupled to the switch, the processor routing around the adjacent network processing device only when the failure notifications identify failures on all of the ports on the switch coupled to the adjacent network processing device* (col. 21, lines 42-55 where in Lee what is happening is that an entire switch has failed, thus all ports have failed, and the data is then routed around the failed switch). It would have been obvious to one of ordinary skill in the art at the time of invention to include the routing around a switch with all ports failed for the purpose of reconnecting the failed links through a different device. The motivation for reconnecting the failed links through a different device is so

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that the communications on those failed links can continue and not be substantially affected by the failed ports.

11. Claims 7, 26, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Haggerty et al.** (U.S.6,331,983) in view of **Hirst et al.** (U.S.6,601,101); and further in view of **Rodrig et al.** (U.S.6,256,314; hereinafter refer as '**Rodrig**').

Regarding claims 7, 26, and 35, Haggerty and Hirst disclose the method of claim 5, the computer program of claim 24, and the system of claim 33. However, Haggerty and Hirst lack what Rodrig discloses, *means for sending in the ARP reply any combination of a null IP address, a null MAC address, or a zero hold time value* (col. 9, lines 30-36; where a zero hold time corresponds to an exception packet with a TTL of zero). It would have further been obvious to one of ordinary skill in the art at the time of invention to include the zero hold time for the purpose of informing the destination that the information in the reply is no longer valid because of the zero TTL. The motivation for giving a time limit to data in a system is because communication systems are constantly changing and there must be a way to distinguish between data that is "up to date" (relevant) and data that is too old to be of any use.

Response to Amendment/Arguments

12. Applicant's arguments filed on June 3rd, 2005 have been fully considered but they are not persuasive.

In regard to claim 1, Applicant argues that **Haggerty** fails to disclose the “*failure notifications including the MAC addresses associated with the port failure*”. Examiner respectfully disagrees. **Haggerty** discloses *the method, the computer program, and the system for identifying failures in the network, which comprise means for detecting the port failure in the switch* (col. 30, lines 58-60); *means for identifying one or more MAC addresses associated with the port failure* (col. 30, lines 60-62); *and means for send failure notifications to other ports on the switch that identify the MAC addresses associated with the port failure* (col. 30, line 65 through col. 31, line 3) *wherein the failure notifications include the MAC addresses associated with the port failure* (wherein, through the use of “unmap down” or “unmap up” message, the link or port failure notification is sent to any node, which has connection effected by the link or port failure or node “*associated with the port failure*”, to unmap or delete the connections or ports from the connection table as disclosed in col. 30, line 58 through col. 31, line 34. It is inherent that the notification message sent out to the ‘effected nodes’ has to have the node address, i.e. “*MAC address*” as disclosed in col. 15, lines 49-60; col. 16, lines 56-64, in order the effected nodes to receive the notification message). Therefore, Examiner concludes that **Haggerty** teaches the arguable features. Claims 10, 20, 29, 38, 42, and 45, 48 are rejected for the similar reason as claim 1, and as in Part 5 above of this Office action.

In response to Applicant’s argument that the references fail to show a certain feature of Applicant’s invention, it is noted that the feature upon which Applicant relies (i.e., the “*gratuitous ARP reply*”, which supports in the specification on page 8, pages 23-24 and in Fig. 8) is not recited in the rejected claim(s) (in claims 24, and 33; and wherein claim 5 is not included the “*gratuitous*” ARP reply). Although the claims are interpreted in light of the specification,

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limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir.1993).

Claims 2, 4-5, 7-9, 11-16, 18-19, 21, 23, 26-28, 30, 32-33, 35-37, 39, 41, 44, 50-53 are rejected as in Parts 5 and 7-11 above of this Office action and by virtue of their dependence from claims 1, 10, 20, 29, 38, 42, and 48.

Allowable Subject Matter

13. Claim 22 would be allowable if rewritten or amended to overcome the objection(s) set forth in this Office action.

14. Claims 6, 17, 25, 34, 40, 43, 46-47, 49, and 54 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

15. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tri H. Phan, whose telephone number is (571) 272-3074. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau T. Nguyen can be reached on (571) 272-3126.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(571) 273-8300

Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office, whose telephone number is (571) 272-2600.

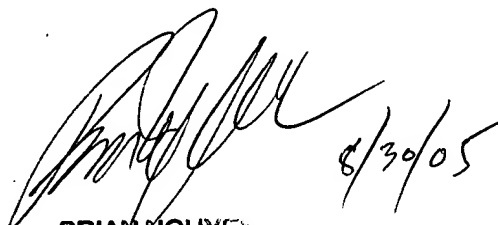
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tri H. Phan
August 26, 2005


BRIAN NGUYEN
PRIMARY EXAMINER